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(54) Mineral-insulated cable

(57) An electric cable 1 comprises two or more electric conductors 2, 3 insulated from one another and from an enclosing metal sheath 4 by tightly compacted powdered mineral insulation 5, at least one of the electric conductors having a coating 6 of a material of a colour different from that of the other conductors.

The inner surface of the enclosing metal sheath 4 may be provided with a coating 7 of a material of a colour which serves to identify the manufacturer and/or type of range of cable.

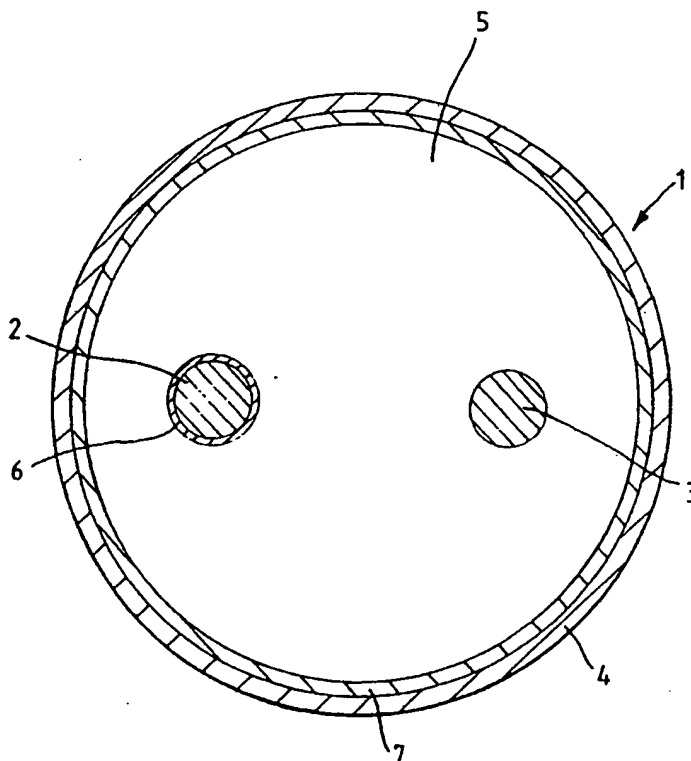
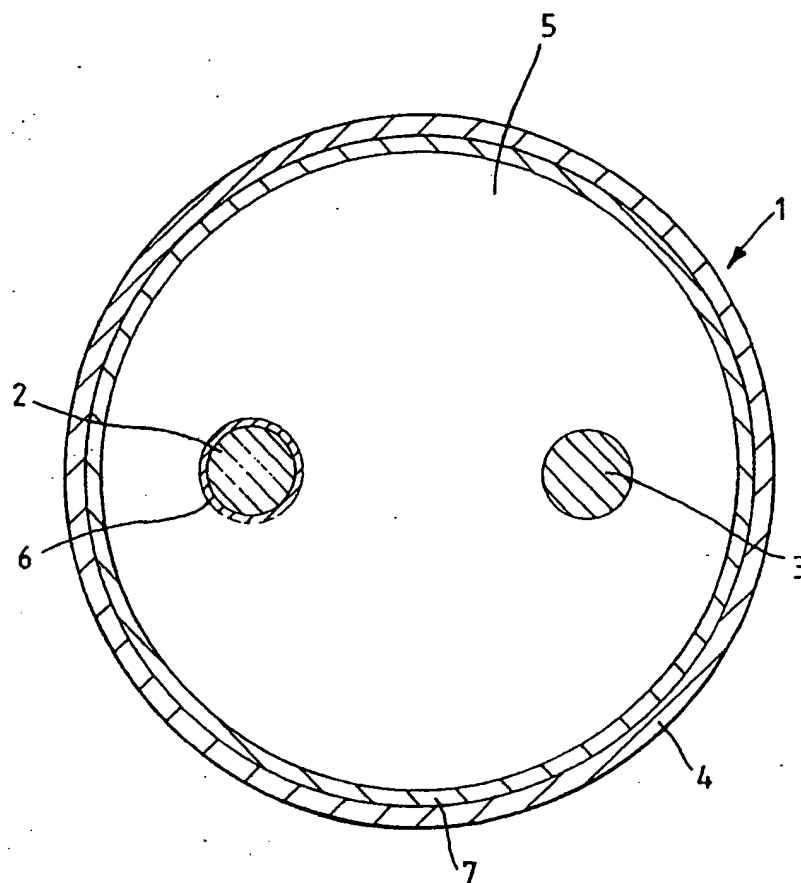


Fig.1.

SW 001060

The drawing(s) originally filed was/were informal and the print here reproduced is taken from a later filed formal copy.

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*Fig.1.*

## SPECIFICATION

### Mineral-insulated cable

- 5 This invention relates to electric cables of the kind comprising two or more electric conductors insulated from one another and from an enclosing metal sheath by tightly compacted powdered mineral insulation, hereinafter referred to as mineral-insulated cables.

- 10 In accordance with the invention we provide a mineral-insulated cable wherein at least one of the electric conductors is coated with a material, of a colour different from that of the outermost surface of the or each other conductor.

- 15 Preferably, the inner surface of the enclosing metal sheath is coated with a material of a colour serving to identify the manufacturer and/or the particular type or range of the cable.

- 20 The coating of colouring material on the or each conductor and/or on the inner surface of the enclosing metal sheath preferably is substantially a continuous, but in some cases it may be in the form of one or more than one stripe running longitudinally of or helically around the surface. Where the coating comprises two or more stripes, at least one of the stripes may be of a colour differing from that of the other stripe or stripes.

- 25 The colouring material of the coating is preferably a mixture of a resin and a coloured pigment in the form of a dispersed powder. The mixture preferably has properties similar to that of paint which will enable application of the colouring material to the required surface by brushing, spraying, rolling or the use of a transfer tape system.

- 30 After application of the mixture the coated parts may be subjected to a short high temperature curing treatment, for example 250°C for 10 minutes, to produce a hard surface suitable for further processing. The mixture is preferably electrically stable and colour stable at temperatures up to at least 500°C. However, in cases where the temperature of the cable in any operation is critical to the result of operation i.e. in cable terminating operations, a heat sensitive colouring material is used.

- 35 During the annealing stage in the production of the mineral-insulated cable, the volatile components of the colouring material are evaporated, thereby leaving primarily the pigment on the conductor or metal sheath to provide the means of identification. Migration of the colour pigment has been found not to occur.

- 40 Suitable materials for use as the colouring material are silicone resin, for example Dow Corning R-60-930, with an inorganic pigment, for example cadmium pigments, lead pigments, chromium pigments or ultramarines.

- 70 In use, the colour of the surface of the metal conductor and of the inner surface of the metal sheath may be easily identified by a visual check or if there is any doubt, by visual examination of a second surface that has been in contact with the coloured coating on the surface. This second surface may be a section of mineral insulation which has been in contact with the coloured coating or, alternatively, a tissue or cloth, that has been gently wiped across a small section of the coloured coating.

- 75 Alternatively the colouring material may be a high temperature paint, for example a silicone resin based paint Ref. No: 199/W/16227 supplied by Goodlass Wall & Co. Limited.

- 80 A description is now given, by way of example, of a preferred mineral insulated electric cable with reference to the accompanying drawing which shows a transverse cross-sectional view of the cable drawn on an enlarged scale.

- 85 Referring to Fig. 1, the cable 1 comprises two identical copper conductors 2, 3 insulated from one another and from an enclosing metal sheath 4 by compacted powdered mineral insulation 5.

- 90 Conductor 2 of the electric cable is provided with a continuous blue coloured coating 6 on its outer surface, the coating material being a high temperature silicone based paint containing a cobalt blue pigment, as supplied by Goodlass Wall & Co Ltd under the Reference DC1325. The coating 6 is applied to enable easy identification of the conductors at any point along the length of the cable.

- 95 The inner surface of the enclosing metal sheath 4 is coated with a layer 7 of high temperature silicone based paint which contains a cadmium scarlet pigment, as supplied by Goodlass Wall & Co Ltd under the reference P4704. The coating 7 enables the type of mineral insulated cable to be identified.

### CLAIMS

1. A mineral-insulated cable comprising two or more electric conductors insulated from one another and from an enclosing metal sheath by tightly compacted powdered mineral insulation wherein at least one of the electric conductors is coated with a material of a colour different from that of the outermost surface of the or each other conductor.

- 115 2. A mineral insulated cable as claimed in Claim 1, in which the inner surface of the enclosing metal sheath is coated with a material of a colour serving to identify the manufacturer and/or the particular type or range of the cable.

- 120 3. A mineral-insulated cable as claimed in Claim 1, or 2, wherein the colouring material is a resin.

- 125 4. A mineral-insulated cable as claimed in Claim 1 or 2, wherein the colouring material

is a paint.

5. A mineral-insulated cable as claimed in any one of Claims 1 to 4, wherein the coating of colouring material on the or each conductor and/or on the inner surface of the enclosing metal sheath is substantially continuous.
- 5 6. A mineral insulated cable as claimed in any one of Claims 1 to 4, wherein the coating of colouring material on the or each conductor and/or on the inner surface of the enclosing metal sheath is in the form of one or more stripes running longitudinally of or helically around the surface.
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